Compositional Gradient Detailed Mapping in Systems of Select Wheat Cultivars

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The speed of data acquisition with only 32 scans co-added and 10 um step size allowed line mapping of the protein starch gradient from the edge (subaleurone) to the central endosperm of wheat cross sections. Replicate specimens of each cultivar were line mapped to arrive at a consensus profile, in terms of dimensions and slope, from the region of maximum protein to that of maximum starch. The same procedure, applied to several different cultivars of the same class of wheat, provided data to establish variance in that genetically controlled feature within a class to enhance long term, on going, similar mapping done using larger step sizes and sampling areas at the Kansas Sate University Microbeam Molecular Spectroscopy Laboratory.